US Army Corps
of Engineers
Baltimore District

ENVIRONMENTAL ASSESSMENT

TAYLORS ISLAND SHORELINE AND WETLAND PROTECTION

DORCHESTER COUNTY, MARYLAND

AUGUST 2005

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TAYLORS ISLAND SHORELINE PROTECTION
WITH MARSH CREATION PROJECT
DORCHESTER COUNTY, MARYLAND
FINDING OF NO SIGNIFICANT IMPACT

In compliance with the National Environmental Policy Act of 1969, as amended, the U.S. Army Corps of Engineers, Baltimore District, has prepared an environmental assessment (EA) to evaluate and document the potential environmental effects associated with the shoreline protection project on Taylors Island, in Dorchester County, Maryland. Taylors Island is southwest of Cambridge in the Chesapeake Bay. The project will protect approximately 150 acres of tidal wetlands that are adjacent to the Taylors Island Wildlife Management Area from erosion; stabilize the shoreline along Punch Island Road; and use dredged material to create approximately one acre of marsh on Barren Island. Barren Island is about six miles south of Taylors Island.

A number of alternatives were considered consisting of the no-action alternative, use of bio-engineering techniques, breakwaters, and revetments. The recommended alternative is to construct a stone revetment along Punch Island Road and up to twelve breakwaters to protect a total of about 4,700 linear feet of shoreline. The revetment would be approximately 2,200 feet in length and would extend approximately 20 feet channelward of the mean lower low water.

The breakwaters would be 100 to 200 feet in length at the crest and located from a minimum of 100 feet to a maximum of 700 feet offshore. The gaps between the segments would be 100 feet except for a 200-foot gap at the entrance to Punch Island Creek. The wave heights impacting the existing wetland shoreline would be greatly reduced by construction of the breakwaters.

Due to poor foundation conditions (soft, silty sediments) under five of the breakwaters, approximately 13,000 cubic yards of unsuitable material will be excavated and backfilled with stone material. The breakwaters will be constructed on top of this new material.

Access channels to breakwaters four and eight may be required due to inadequate water depths. These access channels would consist of removing no more than 2 feet of sediment. The channels would be about 40 feet wide from the 6-foot MLLW (mean low low water) contour of the Bay to the breakwaters. The average length of these channels is approximately 200 feet.

All excavated material would be transported to the previously used Barren Island placement site, where it would be used to create about an acre of marsh. Mechanical or hydraulic dredging will be used to excavate the unsuitable foundation material under the breakwaters and any access channels needed. If mechanical dredging is used, the bucket or clamshell will excavate material and place into a scow for transport to the placement site. If hydraulic dredging is used, a pipeline will be extended to the placement site at Barren Island.

Once the dredge material is transported to Barren Island, it would be placed at a height of the existing marsh and continue toward the stone structures for about 100 feet and then allowed to slope naturally to the structures. If a hydraulic dredge is used, a diffuser would be used while placing the dredged material in the placement site. Upon completion, the material would be graded to

the desired elevation and planted with *Spartina alterniflora* and *S. patens*. Turbidity at the dredging site is expected to be negligible.

Potential impacts from the proposed action were assessed with regard to aesthetics; wetlands; fish and wildlife resources; cultural resources; land use; water and air quality; hazardous, toxic, and radioactive substances; threatened and endangered species; environmental justice; and the general needs and welfare of the public. This EA documents the overall effects of the proposed action and finds that impacts will be relatively minor in nature. There will be minimal permanent loss of shallow water habitat due to the placement of the rock for the shoreline protection. No appreciable long-term adverse environmental and social impacts are anticipated.

The only rare, threatened and endangered species known to exist in the Taylors Island area is the Delmarva fox squirrel. As recommended by the U.S. Fish and Wildlife Service, a 50-foot buffer will be established between the staging area and the adjacent forested area to the south.

Upon reviewing the EA, I find that there will be no significant impacts to the natural or human environment. Because no significant impacts are expected, an Environmental Impact Statement is not required for the proposed action.

Date: _____

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Robert J. Davis
Colonel, Corps of Engineers
District Engineer

TABLE OF CONTENTS

Page

APPENDICES

TAYLORS ISLAND SHORELINE PROTECTION AND MARSH PROTECTION PROJECT DORCHESTER COUNTY, MARYLAND ENVIRONMENTAL ASSESSMENT

1.0 INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Army Corps of Engineers, Baltimore District has prepared this environmental assessment (EA) to evaluate and document the potential environmental and socioeconomic effects associated with the proposed shoreline restoration and aquatic ecosystem protection at Taylors Island, in Dorchester County, Maryland. Taylors Island is southwest of Cambridge, MD, in the Chesapeake Bay.

The shoreline of Taylors Island, along Punch Island Road and in the vicinity of the confluence of the St. John Creek and Punch Island Creek, is eroding rapidly due to wave action. Behind the peninsula separating the Chesapeake Bay and St. John Creek is approximately 150 acres of high value wetlands that are adjacent to the Taylors Island Wildlife Management Area. The wetlands would be subject to degradation if the peninsula were allowed to breach. The purpose of this project is to stabilize the shoreline along Punch Island Road and protect the tidal wetlands. The length of the study area is approximately 4,700 linear feet for the revetments and breakwaters (Appendix E; Figure 1 and Figure 2).

Barren Island is about six miles south of Taylors Island. The Barren Island placement site is also being used by the Honga River and Tar Bay Federal Navigation Channel Maintenance Dredging project. An EA was prepared for the project and Finding of No Significant Impact (FONSI) was signed on July 17, 2003. The Honga River and Tar Bay EA is hereby incorporated by reference.

1.1 STUDY AUTHORITY

This project is being conducted under the authority of Section 510 of the Water Resources Development Act of 1996, as amended. This authority enables the U.S. Army Corps of Engineers to provide environmental assistance to the Commonwealths of Pennsylvania and Virginia, as well as the State of Maryland in restoring and protecting the Chesapeake Bay watershed. This project would be cost-shared with the Council for Dorchester County as the non-Federal sponsor and support from the Maryland Department of Natural Resources (MD DNR).

1.2 PUBLIC INVOLVEMENT

Formal agency coordination letters were sent in 2001 to Federal, State, and local agencies, requesting written comments concerning interests within their agencies' area of responsibility. Coordination has been ongoing since then. Copies of coordination letters and responses are provided in Appendix D. This EA is being made available to nearby residents, as well as Federal, State and local resource agencies for a 30-day comment period.

SECTION 2.0
ALTERNATIVES

2.0 ALTERNATIVES

2.1 NO-ACTION

The no-action alternative would consist of no work being conducted at the site. The shoreline would continue to erode at 12 feet per year. This will lead to the continued loss of land, tidal wetlands, and deterioration of aquatic habitat. Wetlands at the site would be subject to degradation if the peninsula were allowed to breach. Continued erosion of the shoreline and the eventual erosion and undermining of Punch Island Road would also likely occur. Dorchester County would be expected to continue maintenance of the road to include placing rock along the waterside of the road. If the road washes out, several homeowners would lose the only available land access to their homes.

2.2 BIOENGINEERING TECHNIQUES

Environmentally friendly construction methods such as the use of logs and vegetation were considered. However, due to the large fetch and strong wave energy at the site, a more substantial structural solution (i.e., rock, stone revetments) is required to adequately protect the shoreline and road. Bioengineering techniques were not considered further.

2.3 STONE REVETMENT

This alternative involves the removal and temporary stockpiling of the existing stone and rubble revetment along approximately 2,200 linear feet of Punch Island Road. The existing revetment is failing in places and is overtopped during storm events. A new, more substantial revetment would be created by placement of bedding and larger armor stone. Stone revetments are typically used to protect and stabilize shorelines against high to severe erosive forces as found at this site. The design would provide habitat for fish and other aquatic organisms. The rock can be used by small fish for hiding and foraging and also as a feeding area for other aquatic organisms. The new revetment is expected to require little to no maintenance for 25 years.

2.4 OFFSHORE SEGMENTED BREAKWATERS

This alternative consists of constructing ten to twelve offshore breakwater segments of varying lengths. The breakwaters would be constructed out of rock/stone. Gaps between the breakwaters would allow for improved water circulation and the passage of aquatic organisms. Navigational access to Punch Island Creek and St. John's Creek will still exist. As with revetments, stone breakwaters provide a habitat for fish and other aquatic organisms. The breakwater would also deflect the erosive energy of the currents and minimize scouring. The new breakwaters are expected to require little to no maintenance 8 or 25 years(Appendix E; Figure 1).

2.5 COMBINATION OF REVETMENT, OFFSHORE SEGMENTED BREAKWATERS WITH MARSH CREATION (PREFERRED ALTERNATIVE)

The recommended alternative is to construct a stone revetment along Punch Island Road and up to twelve breakwaters (Figure 1) to protect a total of about 4,700 linear feet of shoreline. The construction of the stone revetment would include removal and temporary stockpiling of the existing stone revetment, placement of geotextile material along the slope and adjacent Bay bottom, and the placement of bedding and armor stone to create a new revetment. Existing stone would be reused if practical. The revetment would be approximately 2,200 feet in length and would extend approximately 20 feet channelward of the mean lower low water.

The breakwaters would be 100 to 200 feet in length at the crest and located from a minimum of 100 feet to a maximum of 700 feet offshore. The gaps between the segments would be 100 feet except for a 200-foot gap at the entrance to Punch Island Creek. The wave heights impacting the existing wetland shoreline would be greatly reduced by construction of the breakwaters. For functional design of the project and effective stabilization of the existing shoreline, it has been determined that the design wave conditions impacting the existing shoreline be limited to wave heights of 1.5 feet to a maximum of 2.0 feet. This is expected to provide the most reduction of the wave energy and protection of the tidal wetlands.

Due to poor foundation conditions (soft, silty sediments) under five of the breakwaters, approximately 13,000 cubic yards of unsuitable material will be excavated and backfilled with stone material. The breakwaters will be constructed on top of this new material.

Access channels to breakwaters four and eight may be required due to inadequate water depths. These access channels would consist of removing no more than 2 feet of sediment. The channels would be about 40' wide from the 6' MLLW contour of the Bay to the breakwaters. The average length of these channels is approximately 200'.

All excavated material would be transported to the previously used Barren Island placement site, where it would be used to create about an acre of marsh. Mechanical or hydraulic dredging will be used to excavate the unsuitable foundation material under the breakwaters and any access channels needed. If mechanical dredging is used, the bucket or clamshell will excavate material and place into a scow for transport to the placement site. If hydraulic dredging is used, a pipeline will be extended to the placement site at Barren Island.

Once the dredge material is transported to Barren Island, it would be placed at a height of the existing marsh and continue toward the stone structures for about 100 feet and then allowed to slope naturally to the structures. The dredged material would be placed no higher than +0.5 MLLW at the toe of the structure. If a hydraulic dredge is used, a diffuser would be used while placing the dredged material in the placement site. Upon completion, the material would be graded to the desired elevation and planted with *Spartina alterniflora* and *S. patens*. Turbidity at the dredging site is expected to be negligible.

Delivery of most of the construction materials and equipment to the site for the breakwaters is expected to be by barge. Majority of the breakwaters would be constructed by water. However, due to shallow depths in the vicinity of the two northern most breakwaters, a temporary

causeway may have to be built to allow construction access. If a temporary causeway is built for the construction access of the two northern most breakwaters, it will consist of clean sand or stone material. No fine grained material will be used its construction. The temporary causeway would be removed upon completion of the project.

SECTION 3.0
AFFECTED ENVIRONMENT

3.1 LAND USE

Located in Dorchester County, Taylors Island is a low marshy island in the Chesapeake Bay and is 14 miles (23 km) west- southwest of Cambridge, Maryland. The island is separated from the mainland by creeks and accessed via bridge by State Highway Route 16 West. Farming and forestry are the main land uses in Dorchester County. The area is rural in character and only sparsely developed. Open space in the form of farmland, forests, and wetlands dominates much of the landscape.

Barren Island consists of three eroding island remnants totaling about 180 acres in size. The island is federally owned and managed by the U.S. Fish and Wildlife Service (USFWS) as a satellite refuge to the Blackwater National Wildlife Refuge. Barren Island consists of several different types of high quality habitat including low and high salt marsh, tidal flats, and forested upland habitat. Public access to the island is restricted.

3.2 GEOLOGY/SOILS

The study area is situated within the physiographic region known as the Mid-Atlantic Coastal Plain. The Coastal Plain is characterized by rolling, dissected uplands. Sediments consisting of mainly sands, silts, clays and gravel arranged in a wedge-shaped mass roughly 3,500 feet thick, underlie the project area. The general soil type found on the island is the Othello-Elkton, which is characterized as nearly level, poorly drained soil that was formed in silty materials over sandy materials. Elkton silt loam, Elkton mucky silt loam, Mattapex silt loam, Keyport silt loam, Sunken mucky silt loam, Honga peat soils, and sand are all found within the project area. Elkton silt loam, Elkton mucky silt loam, Sunken mucky silt loam and Honga peat are all typified as poorly drained soils. Whereas, Mattapex silt loam, and Keyport silt loam are characterized as moderately well drained soils.

Barren Island is comprised of Holocene Tide Marsh Deposits primarily consisting of silt and clay with thin beds of sand. These soils are predominately deep, slowly permeable, and poorly drained soils; however, soils towards the southern end of the island in the Mattapex series are moderately well drained. The soils on Barren Island are typical of the surrounding area in Dorchester County.

3.3 PRIME AND UNIQUE FARMLANDS

Prime and Unique Farmland is defined by the U.S. Department of Agriculture as land that has the best combination of physical and chemical characteristics for producing food, feed, forage,

fiber and oilseed crops and is available for these uses. It could be cultivated land, pastureland or forestland, but it is not urban or built-up land or water areas. No prime and unique farmlands are designated on Taylors Island. There are soils classified as prime and unique farmland on Barren Island. Soils in this location are classified Matapeake silt loam.

3.4 TOPOGRAPHY

Western Dorchester County is low-lying and possesses nearly level topography. Elevations on Taylors Island reach a maximum of only about five feet above sea level. Sea level is rising at a rate of about 1.2 inches/10 years in this area, and is the major factor driving shoreline erosion over the long-term. The historic erosion rate for the shoreline along Taylor Island averages greater than 8 to 10 feet/year.

Barren Island is also experiencing high erosion rates. Shoreline erosion has caused Barren Island to lose approximately 78% of its acreage since 1884 (E2CR 2002). As inundation progressed Barren Island became fragmented into three remnants by shoreline erosion. Currently, the three remnants that make up Barren Island total 180 acres. The USFWS estimated that erosion caused Barren Island to lose approximately 450 acres at a rate of 2.4 to 3.5 acres per year over the last 325 years. Barren Island has a very low topographic relief with a maximum elevation of 6 feet above mean high tide (MHT) (Weston 2002).

3.5 AIR QUALITY

The Federal Clean Air Act requires the U.S. Environmental Protection Agency to set primary National Ambient Air Quality Standards (NAAQS) for commonly occurring air pollutants that pose public health threats. These pollutants are known as criteria pollutants. Currently, NAAQS exist for ground level ozone, particulate matter (PM), carbon monoxide, sulfur dioxide, lead and nitrogen. Dorchester County is in attainment for all NAAQS.

3.6 CLIMATE

Dorchester County has a humid, semi-continental climate. The winters are mild and the summers are rather hot. Spring and fall are the most pleasant seasons. The hottest month is July with temperatures averaging 80°F. January and February have the coldest temperatures. The precipitation is fairly evenly distributed throughout the year. July and August have an average of more than 4 inches of rainfall, due to greater evaporation during these months.

3.7 SURFACE AND GROUNDWATER

Drainage in Dorchester County is towards the Chesapeake Bay, with the Choptank and Nanticoke Rivers and their tributaries providing most of the drainage. Because all of the main rivers are tidal and most of the County possesses muted topography, drainage into the Bay is rather sluggish. Groundwater is shallow in the area. Wetland areas have saturated soils at or near the surface.

3.8 WILD AND SCENIC RIVERS/AMERICAN HERITAGE RIVERS

The Wild and Scenic Rivers Act was established to help protect rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. There are no Wild and Scenic Rivers in Maryland.

3.9 WATER QUALTIY

Determining the water quality includes taking measurements of a variety of physical properties and chemical constituents that are known to be limiting to key species, organisms, or affect the health of an ecosystem. Physical variables considered include temperature, pH, conductivity, salinity, dissolved oxygen, turbidity, and water clarity. Nitrogen, phosphorous and silicon are some of the chemical variables considered when testing for water quality.

Water quality within the Chesapeake Bay varies seasonally, and may change significantly from year to year depending on weather conditions. Nutrients and sedimentation from point and non-point sources, physical mixing and biological processes influence water quality. Chemical, biological and physical indicators are measured by the Maryland's Chesapeake Bay Water-Quality Monitoring Program.

The water quality within the project area ranges from fair to good with a trend toward improvement. Surrounding land use is a combination of residential, forest, and agricultural. The Chesapeake Bay at this project area is classified as a Use II, shellfish waters.

3.10 BIOLOGICAL RESOURCES

3.10.1 Shellfish & Finfish

A variety of finfish and shellfish inhabit the water adjacent to the project site. Sport and commercial species include menhaden (*Brevoortia tyrannus*), bluefish (*Pomatomous salatrix*), white perch (*Morone Americana)*, striped bass (*Morone saxatilis*), winter flounder (*Pseduopleuronectes americanus*), spot (*Leiostomus xanthurus*), sea trout (*Cynoscion nebulosus*), and blue crab (*Callinectes sapidus*).

There is a designated natural oyster bar (NOB 19-4) located approximately 1,000 feet offshore of Taylors Island and there are two NOBs located in the vicinity of Barren Island. Crabbing takes place offshore of Taylors Island, as does fishing of the mouths of St. John and Punch Island Creeks.

The Choptank River area is designated as essential fish habitat (EFH) for windowpane flounder (*Scopthalmus aquosos*), juvenile and adult blue fish, and summer flounder (*Paralichthys dentatus*) – juvenile and adult life stages. Other species listed in the summary of the EFH Designation for the Choptank River area in Maryland include the red drum (*Sciaenops occelatus*), Spanish mackerel (*Scomberomorus maculatus*), king mackerel (S. *cavalla*), and cobia (*Rachycentron canadum*). An EFH assessment for the project area can be found in Appendix B.

3.10.2 Wildlife

The marshy areas of the island provide cover for muskrats, raccoons and river otters, which are typical animal types associated with marshes. The small stands of forest support white-tailed, a species of elk native to Asia. Species within the project area are typically wildlife such as the Eastern cottontail, gray squirrel, opossum, striped skunk, raccoon and white tail deer. Other small mammals expected in the project area include white-footed mouse, house mouse, Norway rat, shrew, mole, and chipmunk. Two introduce species sitka deer and nutria also use the project area. The federally endangered Delmarva fox squirrel can be found in forested areas.

Ospreys and bald eagles fish the deeper waters nearby, while mallard and black ducks feed on roots and other vegetation in the shallows. Buffleheads, canvasbacks and scaup are often seen diving for food in the waters offshore. Herons and egrets use the marshes for hunting food, while shorebirds, like plovers and sandpipers, use the mudflats found along the shores at low tide. Open-water areas north of the site are noted to be Historic Waterfowl Concentration and Staging Areas in winter by the Fish, Heritage, and Wildlife Administration of the State of Maryland.

Additional bird species commonly found in the proposed project area include American robin, Canada geese, mourning dove, woodpeckers, nuthatches, eastern bluebird, starlings, black-capped chickadee, northern cardinal, warblers, and sparrows.

Amphibians and reptiles found in the proposed project area include the Eastern garter and black rat snakes, box painted, and snapping turtles, green tree frog,, American toad diamond back terrapins in the marshes, logger head and Kemp's Ridley sea turtles off shore. .

3.10.3 Vegetation including Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Taylor Island has a large number of wetlands. Punch Island Road is immediately adjacent to the shoreline in the project area. On the opposite side of the road are scrub-shrub and forested wetlands. Uplands in the area are generally used for agricultural or residential uses. At the end of the road is a residential home, with a mowed yard. A small area (less than 0.1 acres) of disturbed wetlands is at the northeast end of the property. Beyond the home, is a vast area of wetlands along St. John's and Punch Island Creeks. This high marsh area is adjacent to the Taylors Island Wildlife Management Area, and is dominated by grasses such as *Spartina alterniflora*, and switch grass (*Panicum virgatum*). The Wild Life Management Area also has large tracts (tens of acres) of tidal wetlands.

The low marshes on Barren Island are dominated by the short and tall forms of saltmarsh cordgrass and big cordgrass; some black needlerush (*Juncus roemerianus*) and saltmarsh bulrush (*Fimbristylis castanea*) have also been observed in the low marshes. Vegetation growing in depressions of the marsh floor includes slender glasswort (*Salicornia eropea),* sea lavender (*Limonium carolinianum)*

and saltmarsh aster (P. Upland forested areas on the northern and southern remnants of the island are dominated by loblolly pine.

3.10.4 Submerged Aquatic Vegetation (SAV)

Review of the Virginia Institute of Marine Science (VIMS) annual aerial surveys, 1987 through 2004, and discussions with Maryland Department of Natural Resources does not indicate any current or historical presence of SAV in the area. To confirm this, a survey of the area was conducted in May 2004 with biologists from the Corps and the USFWS. Sporadic pieces of SAV were seen floating in the water column but no beds were found. These pieces likely floated in from other areas.

Some species of SAV may be present in the late summer, but not in the spring. A second ground survey in the late summer was determined not to be necessary based upon a review of historical information and discussions with the USFWS, National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, and VIMS.

VIMS aerial surveys from 1991 to 2000 for Barren Island show SAV beds present to the east and southeast of the island; however, none have been seen at the proposed placement site.

3.10.5 RARE, THREATENED, AND ENDANGERED SPECIES

In a letter dated March 15, 2004, the USFWS indicated that the Delmarva Fox Squirrel (*Sciurus niger cinereus),* a Federally endangered species, may be found adjacent to the project area. The Delmarva Fox Squirrel occupies mature pine and hardwood forests, both bottomland and upland, with relatively open understory. Bald eagles feed in the area and have nested on the southern end of Barren Island near Whitwoood Cove.

Aquatic threatened and endangered species that may be found in the area include shortnose sturgeon (SNS) and sea turtles (Kemps ridley, loggerhead, and leatherback). No SNS were captured in the waters immediately surrounding Barren Island in the SNS Reward Program as of January 13, 2005. The nearest catch to the project area was approximately 8 nautical miles to the northwest of Barren Island and to the south of James Island where 3 SNS were captured by way of pound nets. SNS are likely transient in the area.

Of the three federally listed protected sea turtles species found in the Bay, loggerheads and Kemp's ridleys are the most common and are most likely to be found in the project area. Leatherbacks typically continue north on their migration past the Chesapeake Bay, while loggerheads and Kemp's ridleys will enter the Bay once water temperatures reach 64.4 to 68°F (Lutcavage and Muscik 1985, Byles 1988, Chesapeake Bay Program 2005). Loggerheads and Kemp's ridley immigrate into the Bay in late May or early June once water temperatures warm and emigrate in September and October (Lutcavage and Musick 1985. Byles 1988, Keinanth et al. 1994). Loggerheads account for nearly 90% of the summer sea turtle population in the Bay (Chesapeake Bay Program 2005). Most species are more prevalent in Virginia waters than in Maryland, although the loggerhead, leatherback and Kemp's ridley have all been stranded in Maryland waters as far north as the Back River (Kimmell, 2004).

In a letter dated April 16, 2002, Maryland DNR Heritage Program indicated that the Wildlife and Heritage Service has no record of State rare, threatened or endangered plants or animals within this project site on Taylor Island. However, on Barren Island the royal tern, Wilson's plover and sedge wren are listed as state "endangered" species (Blasland, Bouck & Lee (BBL), 2005). The Eastern narrow-mouthed toad was observed on Barren Island and is listed as an "endangered" amphibian in the State of Maryland (BBL, 2005; MDNR, 2001).

3.11 CHESAPEAKE BAY CRITICAL AREA AND MARYLAND COASTAL ZONE

The project is within the Chesapeake Bay critical area and the State of Maryland's coastal zone boundaries. The critical area was established to mitigate the damaging impact of water pollution and loss of natural habitat, while also accommodating future growth. The Critical Area Act recognizes that the land immediately surrounding the Bay and its tributaries has the greatest potential to affect water quality and wildlife habitat and thus designated all lands within 1,000 feet of tidal waters or adjacent tidal wetlands as the "Critical Area." The Coastal Zone Management Act, as amended, requires federal actions to be consistent with the enforceable polices of a coastal state's federally approved Coastal Management Plan.

3.12 CULTURAL RESOURCES

Site files maintained by the Maryland State Historic Preservation Officer (SHPO), indicate that there are no known historic properties in the project's area of potential effect. A Prehistoric archaeological site, an undated lithic scatter, was once located south of the project area, but this site has been completely eroded. This portion of the shoreline has been heavily eroded in the past, and has been further disturbed by construction of Punch Island Road. The limited footprint of the breakwater is unlikely to affect any potential underwater historic properties in the project area.

For Barren Island, coordination with the Maryland Historical Trust for the Honga River and Tar Bay Federal Navigation Channel Maintenance Dredging project indicates that the proposed work is unlikely to affect significant historic and archeological properties (USACE 2003).

3.13 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTES (HTRW)

Based upon a review of the U.S. Environmental Protection Agency's (EPA) records search (National Priorities List (NPL), Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Resource Conservation and Recovery Information System (RCRIS), Air Release (AIRS), Permit Compliance System (PCS) or Toxic Release Information System (TRIS)), there are no known HTRW sites within 1000 feet of the Taylors or Barren Island project sites

Should any new information become known concerning the presence of HTRW materials within the project area prior to or during construction, further analysis and agency coordination would be conducted as necessary. Based upon existing and known historic land use, the probability for encountering such materials is low.

3.14 AESTHETICS AND RECREATION

Current recreational use on Taylors Island includes hunting, fishing, picnicking, sightseeing and boating. Local population centers are small villages oriented towards fishing and agriculture. Recreational opportunities along Punch Island Road at the project site are limited. There are several small privately owned docks along Punch Island Road. At present the shoreline possesses a small beach with concrete debris.

Barren Island is owned and managed by the USFWS. There are no permanent residents on the island. There is an old airstrip on the northern remnant of the island. Based on an aerial survey of recreational boat usage in the Chesapeake Bay, the waters around Barren Island have relatively high usage by both motor and sailboats (UMCES 2004). The waters around both Taylors and Barren Island are popular with crabbers and fisherman.

3.15 TRANSPORTATION AND TRAFFIC

Maryland State Highway 16 provides access to Taylors Island via a bridge. It is a two-lane road, generally limited to local traffic that runs parallel to the eastern shoreline of the Chesapeake Bay. Both recreational and commercial boats use the bay, waterways and harbors extensively. Punch Island Road terminates at the project site. There are no public roads on Barren Island.

3.16 NOISE

The project area on Taylors Island experiences minimal noise due to its remoteness and the road terminating at the site. There are limited numbers of private and commercial vehicles using the road to travel to local residences. Most of the noises in the area are either related to boat traffic or typical residential noise like lawn maintenance activities. Nighttime noise levels are quite low due to the remoteness of the area.

Noise levels around Barren Island can be attributed to natural sources such as wind, waves, and bird colonies. Barren Island is free from general anthropogenic noise sources except for boat traffic in the area.

3.17 PUBLIC UTILITIES

There are underground electric and telephone cables adjacent to the project site along Punch Island Road.

3.18 SOCIOECONOMIC CONDITIONS

The total Dorchester County population as of 2000 was 30,674. The Taylors Island population was stable between 1990 and 2000 censuses. There are no residents living on Barren Island.

Table 3-1 Demographic breakdown for Taylors Island based on U. S Census 2000 data.

Race	Number of Persons
Caucasian (only)	234
African American (only)	28
American Indian/Alaska Native (only)	5
Asian (only)	0
Native American/Pacific Islander (only)	0
Other (only)	0
Total	270

Table 3-2: Age percentages in Dorchester County - 2000

Population Age (Years)	Percentage of Population
0 to 19	7,787 (25.4%)
20 to 44	9,651 (31.4%)
45 to 64	7,813 (25.5%)
65 and up	5,423 (17.7%)
Total	30, 674

In 1999, the median household income for Dorchester County totaled $34,077. The unemployment rate for this region is approximately 3.6 percent. Dorchester County's 720 businesses employ 9,300 workers; an estimated 17 of these businesses have 100 or more workers. Manufacturing accounts for nearly one quarter of total employment. The balance of the county's work force is employed primarily in service and trade industries.

3.19 ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued Executive Order (E.O.) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The E.O. requires Federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

As defined by the "Guidance for Addressing Environmental Justice Under the National Environmental Policy Act", "minority" includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin) or Hispanic. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau's statistical poverty threshold, which is based on income and family size. The Census Bureau defines a "poverty area" as a Census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level.

Within Taylors Island, the combined minority population is 28 out of the 270 persons or 10 percent of the population. The poverty level for families in Dorchester County in 1999 is 10.1 percent.

3.20 CHILDREN'S PROTECTION EXECUTIVE ORDER

On April 21, 1997, the President issued Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, which recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health and safety risks. This E.O. requires Federal agencies, to the extent permitted by law and mission, to identify and assess such environmental health and safety risks.

Within Taylors Island, approximately 25.4 percent of the population is 19 years and under. There are no schools or facilities specifically for children in the project area.

3.21 FLOODPLAIN PROTECTION EXECUTIVE ORDER

On May 24, 1977, President Carter issued Executive Order 11988 "Floodplain Management". This E.O. requires Federal agencies to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

Work would occur in tidal waters and is within the tidal floodplain as mapped by the Federal Emergency Management Agency's Floodplain Insurance Maps. The purpose of the project is to stabilize a highly erodable area.

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION

4.1 No-Action Alternative

Under the No-Action Alternative, the benefits of protecting the shoreline would not occur. Without project construction, erosion of the shoreline along Punch Island Road would continue and the approximately 150 acres of tidal wetlands would continue to erode at a rate of 12 feet per year. Under the No-Action Alternative, temporary adverse impacts from construction would not occur, such as dust, air emissions, and noise from earthmoving and construction activities.

4.2 Proposed Action – Revetment, Breakwaters and Marsh Creation

Environmental effects of the proposed project were determined from previous project documentation, agency coordination, and analysis of construction activities necessary to implement the project. Operation of the project was also considered to determine potential long-term impacts after construction is completed. These following descriptions and impacts are from the project plans dated May 27, 2005.

4.2.1 Land Use

The proposed action is located along the shoreline of Punch Island Road and along the Maryland Department of Natural Resource's Taylors Island Wildlife Management Area. The project would help protect the Wildlife Management Area wetlands. Therefore, slower erosion rate is expected to occur to the existing land from the proposed action for Taylors Island. The acre of wetland that would be created at Barren Island would enhance nesting habitat.

4.2.2 Geology/Soils

Construction of the shoreline stabilization project will have no impact to underlying geologic formations in both the short and long term.

Stone revetment

The existing stone revetment would be excavated and stocked piled in an approved on site location. The Dorchester County Highway Department would remove and dispose of the revetment at an off site location. The shoreline would be graded and geotextile material would be placed over eight (8) inches of an underlayer stone. The bedding stone would be placed and to a minimum depth of eight (8) inches. On top of which the primary armor stone would be carefully place to ensure proper contact with adjacent stones.

Breakwaters

Materials for access and to provide a suitable foundation for the breakwaters would be excavated and transported to Barren Island for placement. Rock would be discharged to construct the breakwaters. Access channels would be expected to silt in within 2-5 years. Approximately one acre of wetlands would be created with the dredged material at the placement site by the filling of open water with the material. The existing substrate would be covered. The dredged material

would be placed at a height of the existing marsh and continue toward the stone structures for about 100 feet.

4.2.3 Prime and Unique Farmlands

The Natural Resources Conservation Service in Dorchester County (personal communication with Karen Hoy, NRCS, October 4, 2002) stated that there are no prime or unique farmlands within the Taylors Island project area.

There are soils designated as prime and unique farmland on Barren Island. Creation of the marsh would not have an adverse affect on soils. Work would occur along the shoreline and help minimize erosion.

4.2.4 Topography

The proposed project would have minor adverse affects on the topography of the area. The proposed project would protect the shoreline and slow down the historic rate of erosion along Taylors Island, which is now averaging 8 to 10 feet/year. Breakwaters would be built offshore, extending about 5 feet above mean low low water. Wetlands would be constructed on the western shore of Barren Island.

4.2.5 Air Quality

The project area is outside any non-containment areas for NAAQS. This was confirmed with the Maryland Department of the Environment Air Program Office. No long-term impacts to air quality are expected to occur as a result of the proposed action. Impacts on existing air quality would be short-term, minor, and localized and would be in the form of exhaust emissions and fugitive dust that may be released during construction activities, such as excavation and placement operations.

4.2.6 Climate

Due to relative size of the project, no impacts would occur from the project that would alter meteorology and or alter the climate of the region.

4.2.7 Surface and Groundwater

Due to the nature of the work and the size of the project, no adverse effects on the groundwater are expected. Punch Island Road and the existing revetment already slow the drainage of surface waters to the Bay, resulting in some ponding. The reconstruction of the revetment along the road is not expected to worsen existing drainage. No significant alterations of existing flow patterns or currents will result from the project.

4.2.8 Wild and Scenic Rivers/American Heritage Rivers

There are no national or State-designated wild and scenic rivers or American Heritage river segments located within the project area.

4.2.9 Water Quality

Temporary, minor, and localized turbidity may occur during the time of construction. Erosion and sediment controls measures would be taken reduce turbidity in the Bay. No long-term, adverse impacts to water quality are anticipated as a result of construction of the proposed project. A water quality certification would be obtained from the State of Maryland prior to construction. The proposed project would comply with all Federal and State water quality criteria.

4.2.10 Biological Resources

4.2.10.1 Shellfish & Finfish

Adverse impacts to fish and other aquatic species are expected to be negligible, short-term and temporary in nature. Fish would be temporarily disturbed by construction activity in the immediate vicinity of the project area. Benthic organisms such as worms, snails and other invertebrates, within the project footprint would be destroyed No adverse impacts to their populations are anticipated due to the small scale of the project and the fact that aquatic organisms such as barnacles and crabs are expected to colonize the rock used to construct the revetment and breakwaters. Aquatic organisms are expected to benefit from the proposed action by the reduction in sediments entering the water. Organisms would also be expected to benefit from the creation of wetlands on Barren Island. In a letter dated September 20, 2002, the NOAA National Marine Fisheries Service stated that based on their review of the assessment, they concur with the determination that this project should not result in substantial adverse impacts to EFH Federally managed species. See the EFH assessment in Appendix B.

4.2.10.2 Wildlife

Construction would result in increases in heavy equipment noise that may disrupt noise sensitive species of wildlife during periods of work. Noise sensitive wildlife would be expected to avoid the area during periods of work. A waterfowl concentration area is adjacent to the project site on Taylors Island. Maryland DNR had originally indicated that to protect wintering waterfowl during the winter months, a time of year work restriction should be implemented during construction. Upon further discussions with Maryland DNR, they do not expect construction activities to have an appreciable affect on wintering waterfowl and therefore, a time of year restriction is not necessary.

Work is expected to provide benefits to wildlife in the long term. The work on Taylors Island would help prevent the erosion and subsequent loss of wetland habitat. At Barren Island, the marsh would provide habitat benefits to birds and other wildlife. These noise impacts will be minor and short term, ending once constructions ends.

4.2.10.3 Vegetation including Wetlands

Very little vegetation exists along the shoreline of Punch Island Road at the project site due to the existing revetment. The little vegetation that is there would be removed or covered with stone fill. The small disturbed wetland area (~0.1 acres) at the end of the road in the residential yard would likely be destroyed during construction. Construction staging areas would be in previously disturbed areas, to include an agricultural field at the northwest end of the project site. The adjacent forested areas would not be impacted by this project.

The breakwaters are designed to slow the rate of erosion and protect tidal wetland within the project area. Work on Barren Island would entail the construction of marsh that would be planted with aquatic species such as *Spartina alterniflora* and *S. patens*. See Appendix C for the Clean Water Act Section 404(b)(1) Evaluation for the Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

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4.2.10.4 Submerged Aquatic Vegetation (SAV)

There is no indication that SAV has historically occurred in the project area on Taylors Island. Therefore, no impacts are anticipated. For Barrens Island, SAV beds are absent within the area proposed for the marsh creation.

4.2.10.5 Rare, Threatened, and Endangered Species

Due to concerns with the Delmarva fox squirrel, the USFWS recommended, a 50-foot buffer would be established between the staging area and the adjacent forested area to the south. No adverse affects are expected. This has been made a part of the plans.

Impacts to sturgeon and sea turtles are not expected to occur. The use of hopper dredges is of concern in areas with sea turtles; however, one would not be used on this project.

No adverse affects to State listed rare, threatened or endangered species on Barren Island or Taylors Island are expected to occur. Work would result in the creation of wetland habitat that would be expected to benefit wildlife on the island. See Appendix D for correspondence with resource agencies.

4.2.11 Chesapeake Bay Critical Area and Maryland Coastal Zone

The project is designed to protect Punch Island Road and the eroding shoreline, to include valuable wetland habitat. The project would also create wetland habitat on Barren Island. The proposed work would be coordinated with the States Chesapeake Bay Critical Area Commission, and their approval would be received prior to construction. Likewise, the project is consistent with the state's Coastal Management Plan policies to the maximum extent practicable. A state coastal zone consistency determination would also be received prior to construction.

4.2.12 Cultural Resources

At the project site on Taylors Island, there are no known historic sites in the project area and the likelihood of encountering any is extremely low. Therefore, the proposed work is not anticipated to have an affect on any cultural resources. In a letter dated April 17, 2003, the Maryland SHPO has concurred with this determination. For Barren Island, coordination with the Maryland Historical Trust for the Honga River and Tar Bay Federal Navigation Channel Maintenance Dredging project indicates that the proposed work is unlikely to affect significant historic and archeological properties (USACE 2003). If any historic or archeological resources are discovered, work that may affect the resource would stop until the appropriate coordination with the SHPO is conducted.

4.2.13 Hazardous, Toxic, and Radioactive Wastes (HTRW)

There are no known HTRW within the project area. Based upon existing and known historic land use, the probability for encountering such materials is low. If any HTRW are encountered, appropriate coordination with Maryland Department of Environment would occur.

4.2.14 Aesthetics and Recreation

There would be increased boat and/or vehicle traffic at the project sites during construction. Recreational fishing and boating may be temporarily impacted during the construction of the project. The existing revetment would be constructed and would be slightly larger and more substantial than what currently exists. The docks in the project area would be modified to accommodate the proposed work. Access to St. Johns and Punch Island Creeks would be maintained. After construction is completed, fisherman would be able to resume fishing and crabbing in the area. No significant effects are expected.

4.2.15 Transportation and Traffic

Local traffic would be temporarily impacted during construction. There would be heavy construction equipment working on Punch Island Road. Flagmen and/or appropriate signs would be used to ensure public safety. Notice to mariners will be sent to local marinas and the Coast Guard for the tidal construction.

4.2.16 Noise

There would be no substantial, long-term, adverse noise impacts from the construction of the proposed actions. Short-term noise caused by heavy construction equipment would cause minor disturbances to local residents and wildlife in the area. Construction would be limited to daylight hours so as to minimize disturbance to the adjacent residences.

4.2.17 Public Utilities

The proposed work would improve the protection of Punch Island Road and utilities that run alongside the road.

4.2.18 Socioeconomic Conditions

Any increase to the local population from employment opportunities during construction is expected to be negligible. The project is not expected to result in increased development pressure at the end of Punch Island Road due to the remoteness of the site and presence of wetlands.

During construction, the construction contractors may purchase local goods and services that would provide minor and short-term benefits to the local economy. Construction of the proposed action should also benefit the regional economics by preventing damage to the shoreline, natural resources, and Punch Island Road.

4.2.19 Environmental Justice

The stabilization of the shoreline is expected to benefit all persons that live near or utilize the area. No disproportionately high or adverse impacts to minority or low-income populations would be adversely affected by the project.

4.4.2.20 Children's Protection Executive Order Compliance

Access to the project site would be restricted during construction, so as to ensure the safety of children and others. No children would suffer disproportionately for environmental health or safety risks caused by the proposed project.

4.2.21 Floodplain Protection Executive Order Compliance

The project is located along the shoreline and within the tidal floodplain. Work would help deter and possibly prevent future erosion and protect area property to include Punch Island Road.

5.0 CUMULATIVE IMPACTS

Cumulative effects are a result of impacts on the environment resulting from the incremental increase in impacts related to the implementation of a proposed action, when added to other past, present, and future actions regardless of what agency (Federal or non-Federal) or what person undertakes such other actions. Cumulative effects may be both beneficial and detrimental and can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Parts 1508.7 and 1508.8).

No significant cumulative affect is anticipated from the proposed work. The work would contribute to the hardening of the Chesapeake Bay shoreline to help deter erosion. It will also result in the creation of about 1 acre of marsh.

The following projects are in the Taylors Island and Blackwater National Wildlife Refuge (NWR) area:

Blackwater NWR Demonstration project

Approximately 15 acres of tidal marsh were restored at Blackwater in 2002 and 2003 as a demonstration project designed and constructed under Section 206 of the Water Resources Development Act 1996. Opportunities exist to restore up to several thousand acres of tidal marsh at the refuge.

Honga River and Tar Bay Federal Navigation Channel Maintenance Dredging

Dredged material from the maintenance dredging of Honga River and Tar Bay navigation channels has been disposed of on the west site of Barren Island, Dorchester County, to create about 15 acres of marsh and to protect the island from further erosion.

Eastern Shore: Mid-Chesapeake Bay Island

A feasibility study is currently underway that focuses on restoring/expanding island habitat to provide hundreds of acres of wetland and terrestrial habitat through the beneficial use of dredged material. The study is focusing on the use of Barren and James Islands.

6.0 CONCLUSION

This EA has been prepared to minimize and evaluate impacts to the environment associated with protecting the shoreline on Taylors Island near the end of Punch Island Road.

The recommended plan was found to comply with all pertinent regulations, as presented in the Environmental Compliance Table (Appendix A). Minor impacts to waters of the United States are unavoidable due to physical, safety, and engineering constraints. No practicable alternatives were identified that would accomplish the project purpose and need and not result in a discharge in the waters of the U.S. Impacts have been minimized to the maximum extent practicable. Appropriate and practicable steps to minimize potential adverse impacts would be incorporated into the project. These include the use of a sediment control measures, and a 50-foot buffer between the staging area and the adjacent forested area to the south. The proposed work is not expected to have an adverse affect on any threatened or endangered species. Work would also not have an affect on any property eligible or on the National Register of Historic Places. A state water quality certification or waiver will be requested during the 30-day public review of this document and will be obtained prior to the initiation of construction.

The project would ensure long-term protection of the shoreline. No appreciable or significant adverse effects, either individually or cumulatively, are expected. The proposed action has been coordinated with concerned agencies and the public. This assessment supports the conclusion that the proposed project does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, a finding of no significant impact will be prepared.

7.0 REFERENCES

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APPENDIX A

ENVIRONMENTAL COMPLIANCE TABLE

APPENDIX A

ENVIRONMENTAL COMPLIANCE TABLE
And
COORDINATION

Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements

Federal Statutes	Level of Compliance[1]
Archeological and Historic Preservation Act	Full
Clean Air Act	Full
Clean Water Act	Full
Coastal Zone Management Act	Full
Comprehensive Environmental Response, Compensation and Liability Act	N/A
Endangered Species Act	Full
Estuary Protection Act	Full
Federal Water Project Recreation Act	Full
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	Full
Magnuson Stevens Fishery Conservation and Management Act	Full
Marine Mammal Protection Act	Full
National Historic Preservation Act	Full
National Environmental Policy Act	Full
Resource Conservation and Recovery Act	N/A
Rivers and Harbors Act	Full
Watershed Protection and Flood Prevention Act	Full
Wild and Scenic Rivers Act	N/A
Executive Orders, Memoranda, etc.	
Protection and Enhancement of Cultural Environment (E.O. 11593)	Full
Floodplain Management (E.O. 11988)	Full
Protection of Wetlands (E.O. 11990)	Full
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug. 80)	Full
Environmental Justice in Minority and Low-Income Populations (E.O. 12898)	Full
Protection of Children from Health Risks & Safety Risks (E. O. 13045)	Full

[1] Level of Compliance:

Full Compliance (Full): Having met all requirements of the statute, E.O. or other environmental requirements for the current stage of planning.

Partial Compliance (Partial): Not having met some of the requirements that normally are met in the current stage of planning.

Non-Compliance (NC): Violation of a requirement of the statute, E.O. or other environmental requirement.

Not Applicable (N/A): No requirements for the statute, E.O. or other environmental requirement for the current stage of planning.

APPENDIX B

ESSENTIAL FISH HABITAT ASSESMENT

Taylors Island Shoreline Protection
and
Marsh Creation Project

Section 510 Program

Essential Fish Habitat Impact Assessment

INTRODUCTION

Pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act, preparation of an Essential Fish Habitat (EFH) Assessment is necessary for the Taylor Island, Section 510 Program Shoreline Protection and Marsh Creation project to address potential impacts to any areas designated as EFH. An EFH assessment should include the following components:

- a description of the proposed action,
- listing of species (including life stages) of concern,
- analysis of the effect of the proposed action,
- Federal agency's opinions regarding the effects of the proposed action, and
- proposed mitigation, if applicable.

DESCRIPTION OF PROPOSED ACTION

The recommended alternative is to construct a stone revetment along Punch Island Road and up to twelve segmented breakwaters south of the road's terminus to protect a total of about 4,700 linear feet of shoreline. Due to poor foundation conditions (soft, silty sediments) under five of the breakwaters, approximately 13,000 cubic yards of unsuitable material will be excavated and backfilled with stone material. The breakwaters will be constructed on top of this new material. The breakwaters would be constructed on top of this new material.

Access channels to breakwaters four and eight may be required due to inadequate water depths. These access channels would consist of removing no more than 2 feet of sediment. The channels would be about 40' wide from the-6' MLLW contour of the Bay bottom to the breakwaters. The average length of these channels is approximately 200'.

All excavated material would be transported to the previously used Barren Island placement site, where it would be used to create about an acre of tidal marsh. Mechanical or hydraulic dredging will be used to excavate the unsuitable foundation material under the breakwaters and any access channels needed. If mechanical dredging is used, the bucket or clamshell will excavate material and place into a scow for transport to the placement site. If hydraulic dredging is used, a pipeline will be extended six miles to the placement site at Barren Island.

Once the dredge material is transported to Barren Island, it would be placed at a height of the existing marsh and continue toward the stone structures for about 100 feet and then allowed to slope naturally to the structures. The dredged material would be placed no higher than +0.5 MLLW at the toe of the structure. If a hydraulic dredge is used, a diffuser would be used while placing the dredged material in the placement site. Upon completion, the material would be graded to the desired elevation and planted with *Spartina alterniflora* and *S. patens*. Turbidity at the dredging site is expected to be negligible.

Delivery of most of the construction materials and equipment to the site for the breakwaters is expected to be by barge. Majority of the breakwaters would be constructed by water. However, due to shallow depths in the vicinity of the two northern most breakwaters, a temporary causeway may have to be built to allow construction access. If a temporary causeway is built for the construction access of the two northern most breakwaters, it will consist of clean sand or stone material. No fine grained material will be used its construction. The temporary causeway would be removed upon completion of the project.

SPECIES WITH EFH DESIGNATED IN THE PROJECT AREA

EFH designations are posted on the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, Northeast Region, Habitat Conservation Division EFH web site (*www.nero.nmfs.gov/ro/doc/hcd.htm*). EFH designations for the Chesapeake Bay main stem area by species and their life stages are presented in Table 1.

Initial coordinated with the NOAA Fisheries Service was on May 29, 2002 to determine which species and their life history stages need to be included in the EFH assessment. Juvenile and adult summer flounder, juvenile and adult bluefish, and all stages for red drum are the only species with any likelihood of occurring within the project area. Therefore, it was concluded that the juvenile and adult life history stages of those species would be included in the analysis. Conversely, windowpane flounder, cobia, and king mackerel are generally restricted to the lower Chesapeake Bay (Murdy et al. 1997), Spanish mackerel (Chittenden et al. 1993; Murdy et al. 1997) are restricted to the middle (downstream of the U.S. 50 bridge) and lower Bay (Murdy et al. 1997). Therefore, it was determined that these species would not be considered further in this assessment.

Table 1: EFH designations for Chesapeake Bay.

Species Scientific Name	Common Name	Life History Stages for ChesapeakeBay Designated EFH
(*Paralichthys dentatus*)	summer flounder	juvenile and adult
(*Pomatomus saltatrix*)	bluefish	juvenile and adult
(*Rachycentron canadum*)	cobia	all*
(*Sciaenops ocellatus*)	red drum	all*
(*Scomberomorus cavalla*)	king mackerel	all*
(*Scomberomorus maculatus*)	Spanish mackerel	all*

(Scopthalmus aquosus)	windowpane flounder	juvenile and adult
(Urophycis chuss)	red hake	juvenile and adult
(Pleuromectes americanus)	winter flounder	juvenile and adult
(Clupea hearengus)	Atlantic sea herring	adult
(Pepritus triacanthus)	Atlantic butterfish	all
(Stenotomus chrysoops)	scup	juvenile and adult
(Centropristus striata)	Black sea bass	juvenile and adult

*egg, larvae, juvenile, and adult

ANALYSIS OF EFFECTS

This section contains a brief summary on natural history of summer flounder, bluefish and red drum to provide a foundation for analysis of effects. For each species, this background information is followed by an analysis of the impacts of the proposed work on summer flounder and bluefish juveniles and adults, their preferred habitats, and prey species and red drum for all life stages. This analysis is based on the May 27, 2005 Plans and Specifications for this project.

1. Summer flounder (juvenile and adult)

Natural Life History

Summer flounder occur in the Chesapeake Bay from spring through fall, and generally migrate offshore during the winter. Some summer flounder are known to over winter in the Bay (Murdy et al. 1997). NOAA Fisheries regards summer flounder to be far more abundant in the middle and lower Bay (downstream of the U.S. 50 bridge). Data presented in Packer et al. (1999) supports this, since juveniles and adults have generally been caught when salinities are higher than 10 ppt. Juvenile summer flounder utilize eelgrass beds (Murdy et. al 1997) in the lower Bay. Presumably, they make use of submerged aquatic vegetation (SAV) beds composed of other species as well. Adults typically occur in deep channels, ridges, or sandbars (Murdy et al. 1997). Summer flounder feed primarily on shrimp, fish, and squid.

Project Impacts

Finfish and mobile shellfish prey could easily avoid work areas during construction. Prey are relatively abundant in the area and there is no reason to expect population impacts due to the relative size of the proposed project. Rock used to construct the breakwaters and revetment would provide structural habitat suitable for many prey species.

Juveniles prefer SAV beds and shallow water areas. Since there is no SAV at the project sites, juvenile flounder are not expected to be present. Summer flounder adults are not usually present in the Bay in the fall and winter except for a few individuals, which may over winter. If construction occurs in the spring when this species are known to be present in the mid-Chesapeake Bay, individuals would be expected to avoid the work area mainly due to noise in the water during construction. No adverse impacts are expected to occur.

2. *Red Drum (juvenile , adult larvae, and eggs)*

Natural Life History

Adult red drum occur in the Bay from May through November and are most abundant in the spring and fall near the mouth of the Bay. Adults travel in large schools, which are most commonly found in near-shore marine waters. Red drum have been known to extend as far north in the Bay as the Patuxent River. In mild winters, adults may over winter in the Bay. Adults migrate seasonally, moving in schools offshore and southward in the winter and inshore to the north in the spring. Adults feed primarily on fish, crabs, and shrimp.

Red drum are prolific spawners. Eggs and larvae are widely distributed. Large females are able to produce nearly two million eggs in a single season. Spawning occurs in near-shore coastal waters along beaches and near inlets and passes from late summer through fall. Currents carry eggs spawned in the ocean into estuaries where they hatch. The young appear in estuaries from August through September and newly hatched larva are carried further by water currents toward fresher shallower waters.

Juveniles move from the Bay and estuaries to deeper waters of the ocean in response to dropping water temperatures in the fall and winter. Juvenile red drum feed on zooplankton and invertebrates such as crab and shrimp. Red drum are known to feed near rocks and pilings.

Project Impacts

Finfish and mobile shellfish of the Bay are generally adapted to and are tolerant of turbid waters. Mobile species would be expected to avoid the area during periods of work. No appreciable impacts to prey species is expected.

Although red drum eggs and larvae could be impacted during construction, impact to the population is expected to be minimal since eggs and larvae are widely distributed and there is no reason to believe they would be concentrated at the project sites. Juveniles prefer shallow waters and SAV beds, and can be found in these areas in warmer months. Juvenile bluefish would be expected to avoid the work area if present. There are no SAV beds at the project sites.

Adults are not typically found in high numbers this far north in the Chesapeake Bay. However, if the adults are in the area, they are very mobile and should be able to avoid the work area.

3. Bluefish (juvenile and adult)

Natural Life History

Adult and juveniles bluefish occur in the Chesapeake Bay from spring through autumn (Murdy et al. 1997) and move south or farther offshore during fall (Fahay et al. 1999). Bluefish are common in the upper Bay (north of the U.S. 50 bridge). They are sight feeders, with smaller individuals feeding on a wide variety of fishes and invertebrates. Larger bluefish feed almost exclusively on fishes, particularly Atlantic menhaden (*Brevoortia tyrannus*), bay anchovies (*Anchoa mitchelli*), and Atlantic silversides (*Menidia menidia*).

Bluefish travel in schools of like-sized individuals and undertake seasonal migrations, moving into the Mid-Atlantic Bight during spring. Juveniles (including young of the year) begin to depart the Mid-Atlantic estuaries and move into the Atlantic Ocean in October and travel as far south as Cape Hatteras and Florida to over winter.

Project Impacts

Impacts to typical prey species of bluefish are not anticipated because the young of species such as bay anchovies, menhaden, and silversides are highly mobile, and should be able to avoid the construction sites. Individuals should return after the construction is completed.

If work occurs in the fall, no direct impacts are expected to adult and juvenile bluefish since they over winter off of the southeastern coast of Florida. Adults are not typically bottom feeders and are strong swimmers that can easily avoid turbid conditions. Juveniles prefer shallower waters and can be found in Florida in warmer months. If construction occurs in warm weather, juvenile bluefish, which may be in the shallow area, can readily move out of the work area.

FEDERAL AGENCY'S OPINION

The proposed work would have no appreciable adverse affect on EFH species or their prey. The project would likely adhere to a spring schedule, which would preclude

impacts to bluefish, summer flounder, and red drum. Since there are no SAV beds in the project area, activities would not cause any effect to this resource or juvenile species that tend to utilize this type of habitat. EFH species and mobile prey species would be expected to avoid the project sites during construction. The project would ultimately benefit aquatic species by reducing the loss of wetland habitat, reducing sedimentation in the bay, protecting tidal marsh at Taylors Island WMA, and providing wetland habitat. The breakwaters and revetment would provide rock habitat and greatly reduce, erosion at the project site. However, there would be some loss of unconsolidated bottom material (silt and mud) due to the placement of rock. There would also be localized impacts to benthic organisms from dredging activities. Wetlands to be constructed on Barren Island would provide habitat for prey and juvenile EFH species. In conclusion, the Baltimore District, after reviewing relevant fisheries information and analyzing potential project impacts, has determined that the proposed project complies with the provisions of the Magnuson-Stevens Fishery Conservation and Management Act, as amended.

REFERENCES

Chittenden, M.E. Jr., L.R. Barbieri, and C. M. Jones. 1993. Spatial and temporal occurrence of Spanish mackerel in Chesapeake Bay. Fishery Bulletin 91: 151-8.

Fahay, M.P., P.L. Berrien, D.L. Johnson, and W.W. Morse. 1999. Essential fish habitat source document: bluefish, *Pomatomus saltatrix*, life history and habitat characteristics. September 1999. U.S. Dept. of Commerce. NOAA Technical Memorandum NMFS-NE-144. Online edition: http://www.nefsc.nmfs.gov/nefsc/publications/text/nefscseries/current/techmemo/Bluefish144.pdf.

Murdy, E.O., R.S. Birdsong, and J.A. Musick, 1997. *Fishes of Chesapeake Bay.* Smithsonian Institution Press. Washington D.C. 324 p.

Packer, D.B., S.J. Griesbach, P.L. Berrien, C.A. Zetlin, D.L. Johnson, and W.W. Morse. 1999. Essential fish habitat source document: summer flounder, *Paralichthys dentatus*, life history and habitat characteristics. September 1999. U.S. Dept. of Commerce. NOAA Technical Memorandum NMFS-NE-151. Online edition: http://www.nefsc.nmfs.gov/nefsc/publications/text/nefscseries/current/techmemo/SummerFlounder151.pdf

APPENDIX C

CLEAN WATER ACT SECTION 404(B)(1) EVALUATION

CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

Taylors Island Shoreline Protection
and
Marsh Creation Project

1. Project Description

A. Location

Construction would occur at the end of Punch Island Road on Taylors Island, which is southwest of Cambridge on the Chesapeake Bay in Dorchester County, Maryland. Dredged material from the stabilization work on Taylors Island would be used to create a marsh on the west side of Barren Island. Barren Island is about 6 miles south of Taylors Island.

B. General Description

The goal of this project is to protect approximately 150 acres of tidal wetlands that are adjacent to the Taylors Island Wildlife Management Area from erosion and to stabilize the shoreline along Punch Island Road. Shoreline erosion is threatening the road, which provides sole access to several homeowners. During high wave events or storm surges, water overtops the current revetment and erodes the shoreline.

The recommended alternative is to construct a stone revetment along Punch Island Road and up to twelve segmented breakwaters east if the road's terminus to protect a total of about 4,700 linear feet of shoreline. Due to poor foundation conditions (soft, silty sediments) under five of the breakwaters, approximately 13,000 cubic yards of unsuitable material will be excavated and backfilled with stone material. The breakwaters will be constructed on top of this new material. The breakwaters would be constructed on top of this new material. This analysis is based on the May 27, 2005 Plans and Specifications for the project.

Access channels to breakwaters four and eight may be required due to inadequate water depths. These access channels would consist of removing no more than 2 feet of sediment. The channels would be about 40' wide from the 6' MLLW contour of the Bay to the breakwaters. The average length of these channels is approximately 200'.

All excavated material would be transported to the previously used Barren Island placement site, where it would be used to create about an acre of marsh. Mechanical or hydraulic dredging will be used to excavate the unsuitable foundation material under the breakwaters and any access channels needed. If mechanical dredging is used, the bucket or clamshell will excavate material and place into a scow for transport to the placement site. If hydraulic dredging is used, a pipeline will be extended to the placement site at Barren Island.

Once the dredge material is transported to Barren Island, it would be placed at a height of the existing marsh and continue toward the stone structures for about 100 feet and then allowed to slope naturally to the structures. The dredged material would be placed no higher than +0.5 MLLW at the toe of the structure. If a hydraulic dredge is used, a diffuser would be used while placing the dredged material in the placement site. Upon completion, the material would be graded to the desired elevation and planted with *Spartina alterniflora* and *S. patens*. Turbidity at the dredging site is expected to be negligible.

Delivery of most of the construction materials and equipment to the site for the breakwaters is expected to be by barge. Majority of the breakwaters would be constructed by water. However, due to shallow depths in the vicinity of the two northern most breakwaters, a temporary causeway may have to be built to allow construction access. If a temporary causeway is built for the construction access of the two northern most breakwaters, it will consist of clean sand or stone material. No fine grained material will be used its construction. The temporary causeway would be removed upon completion of the project

C. Authority

This project is being conducted under the authority of Section 510 of the Water Resources Development Act of 1996, as amended. This authority enables the U.S. Army Corps of Engineers to provide environmental assistance to the Commonwealths of Pennsylvania and Virginia, as well as the State of Maryland in restoring and protecting the Chesapeake Bay watershed.

D. General Description of the Discharge Material

Clean stone and gravel, with minimal to no fine materials, would be used to construct the revetment and breakwaters. Armor stone would range between 900 and 1,700 pounds. Secondary armor stone would range between 400 and 1,000 pounds. Core stone would range between 90 and 170 pounds. Underlying stone would range between 1.5 and 4 inches in size. Bedding stone would range between 3 and 8 inches in size. The material to be dredged for the breakwaters and access channels (up to about 13,000 cubic yards) would be used to create approximately 1 acre of wetlands on the western side of Barren Island. This material to be removed is very soft/loose sand, silt and clay.

E. Description of the Proposed Discharge Site

Revetment: Work would occur along about 2,200 linear feet of Punch Island Road. The revetment site has been previously disturbed. The project area has fish and benthic species typical of tidal bottom habitat in the Bay. There is no documented history of submerged aquatic vegetation (SAV) in the project area.

Breakwaters: The breakwaters would be constructed beyond the terminus of Punch Island Road and extend past St. John and Punch Island Creeks. The breakwaters would

protect about 2,500 linear feet of shoreline. As with the area along Punch Island Road, there is no SAV in the project area. Water depths are typically in the four to five foot range (MLLW) and drop down to about 9 feet in the Punch Island Creek channel.

Barren Island Placement Site: Material would be placed along the shoreline of Barren Island behind the existing stone structure. The shoreline is comprised of sand with some silt/clay.

F. Description of Dredging and Placement Method

Revetment work would occur primarily from the existing road and be done by rock grab, crane, backhoe and/or similar types of equipment. The existing revetment would be removed. Bedding material, core stone, and armor would be placed to construct the new revetment.

Delivery of most of the construction materials and equipment to the site for the breakwaters is expected to be by barge. A temporary causeway at the east end (near the end of Punch Island Road) may be constructed to allow for construction of the two most western breakwaters due to shallower water depths that limit barge access. An access channel to several of the breakwaters may also be required due to inadequate water depths. Due to poor foundation conditions (soft, silty sediments) under five of the breakwaters, approximately 13,000 cubic yards of unsuitable material will be excavated and backfilled with stone material. The breakwaters will be constructed on top of this new material. The breakwaters would be constructed on top of this new material. Bedding material, core stone, and armor would be placed to construct the breakwaters.

Material would be excavated either mechanically or hydraulically. The material would then be transported by barge or pumped via pipeline to Barren Island. The dredged material would be placed at a height of the existing marsh and continued toward the stone structures for about 100 feet and then allowed to slope naturally to the structures. If a hydraulic dredged is used, a diffuser would be used while placing the dredged material in the placement site. Upon completion, the material would be graded to the desired elevation and planted with aquatic species.

2. Factual Determinations

a. Physical and Substrate Determinations

(1) Substrate elevation and slope – Along Punch Island Road, work would occur from above the road's surface down to about -2' MLLW. Slopes for the revetment are 2 horizontal to 1 vertical. Water depths at the breakwater site are typically in the four to five foot range (MLLW) and drop down to about 9 feet in the Punch Island Creek channel. At Barren Island, the slopes are gradual and material would be placed no higher than 0.5 MLLW at the toe of the structure.

(2) Sediment Type – Rock from the existing revetment along Punch Island Road would be removed. Sediments to be excavated are very soft, loose sand, silt and clay.

(3) Dredged/Fill Material Movement – There would be temporary adverse impacts such as increased turbidity during construction. No movement of fill materials is expected at the site following completion of the project. The access channels would be expected to silt in over time.

(4) Other Effects – N/A

(5) Action Taken to Minimize Impacts – Clean fill materials with minimal to no fines would be used to construct the breakwaters and revetments. At Barren Island, due to the soft silty nature of the material, best management practices (BMPs) would be implemented to ensure return water meets state water quality standards.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water Quality

(a) Salinity – No changes are expected.
(b) Chemistry – No changes are expected.
(c) Clarity – Minor and temporary impacts expected during construction. Impacts are expected to be localized in nature. Stabilization of the shoreline should help improve water clarity in the long run.
(d) Color – Minor and temporary changes expected during construction.
(e) Odor - No changes are expected.
(f) Taste - Not applicable.
(g) Dissolved Gas Levels - No changes are expected.
(h) Nutrients – No changes are expected.
(i) Eutrophication – No changes are expected.
(j) Temperature – No changes are expected.

(2) Current Patterns and Circulation

(a) Current Patterns and Flow – No significant changes in current patterns or flow is expected at the revetment site since a revetment already exists. Minor changes are expected from the construction of the breakwaters. Water circulation would be good at the breakwater site since the breakwater is segmented.
(b) Velocity – Minor changes are only expected around the breakwaters.
(c) Stratification - No changes are expected.
(d) Hydrologic Regime - No changes are expected.

(3) Normal Water Level Fluctuations – No changes are expected.

(4) Salinity Gradients – No changes are expected.

(5) Actions That Will Be Taken to Minimize Impacts - A sediment erosion and control plan would be developed with BMP's to minimize the suspension of sediment during construction activities; thereby, reducing impacts to water quality. A state water quality certification would be obtained prior to the initiation of construction.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site - Increases in turbidity at the project sites is expected during construction. No adverse long term environmental impacts are expected. The project would provide overall benefits by reducing erosion rates at the site.

(2) Effects (degree and duration) on Chemical and Physical Properties of the Water Column

(a) Light Penetration – Minor, temporary, and localized reductions in light penetration may occur during construction due to increased turbidity levels.
(b) Dissolved Oxygen – No changes are expected.
(c) Toxic Metals and Organics – N/A
(d) Pathogens – N/A
(e) Aesthetics – Only temporary adverse affects are expected during construction due to the likelihood of increased turbidity.
(f) Temperature – No changes are expected.

(3) Actions Taken to Minimize Impacts - A sediment erosion and control plan would be prepared with BMPs to minimize the suspension of sediment during construction.

d. Contaminant Determinations

There are no known hazardous, toxic, or radioactive wastes (HTRW) within the project area. Based upon existing and known historic land use, the probability for encountering such materials is low. If any HTRW are encountered, appropriate coordination with Maryland Department of Environment would occur. Only clean fill materials, free of contaminants, would be used.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton - Impacts from turbidity generated during construction are anticipated to be minor and localized. No significant adverse impacts are expected. Benthos typical of rock structures, such as barnacles, would colonize the new revetment/breakwaters.

(2) Effects on Benthos – Permanent impacts would occur to benthos living in the footprint of the project. Benthos in the area would be covered by rock and by the placement of dredge material. Impacts are expected to be minor based on the health of the overall benthic population in the surrounding area and the relative size of the project. Organisms would be expected to colonize the sites following construction.

(a) Primary Production, Photosynthesis - Turbidity generated during construction may temporarily reduce photosynthesis within the immediate project area.
(b) Suspension/Filter Feeders - Minor, temporary, and localized impacts due to increased turbidity would occur during construction.
(c) Light Feeders - Minor, temporary, and localized impacts due to turbidity may occur during construction.

(3) Effects on Nekton - Construction activities would cause temporary and minor disturbances to nektonic organisms during construction.

(4) Effects on Aquatic Food Web - No appreciable adverse impacts are expected. Impacts would be localized and temporary.

(5) Effects on Special Aquatic Sites

(a) Sanctuaries and Refuges – Work would protect a portion of the shoreline of the Taylors Island Wildlife Management Area from erosion. Effects would be beneficial. Barren Island is a satellite refuge of the U.S. Fish and Wildlife's (USFWS) Blackwater National Wildlife Refuge. Work is being coordinated with the USFWS and will provide benefits to the island.

(b) Wetlands- A small disturbed wetland area (~0.1 acres) at the end of the road in the residential yard would likely be destroyed during construction. This wetland is anthropagenic and has minimal environmental value. Wetlands southeast of the roads terminus would not be disturbed as work would occur off-shore. The breakwaters are intended to slow down the rate of erosion and protect tidal wetland within the Taylor Island Wildlife Management Area. Work on Barren Island would entail the construction of marsh that would be planted with aquatic species. See section 3.10.3 and 4.2.10.3 in the EA.

(c) Tidal flats – Approximately 1 acre of tidal area along the shoreline of Barren Island would be converted to marsh. The marsh/wetland complex would provide ecological benefits to Barren Island.

(d) Vegetated Shallows – There is no existing or indication that SAV has historically occurred in the project area on Taylors Island. For Barrens Island, SAV beds are absent within the area proposed for the marsh creation.

(e) Riffle and Pool Complexes – N/A.

(6) Threatened and Endangered Species - Due to concerns with the Delmarva fox squirrel, as recommended by the USFWS, a 50-foot buffer would be established between the staging area and the adjacent forested area to the south. Bald Eagles may fly over the project sites, but none are known to currently nest in the project vicinity. No adverse affects are expected. Due to the size of the project, its location, and construction methodology, impacts to sturgeon and sea turtles is not expected to occur. Use of hopper dredges are of concern in areas with sea turtles; however, one would not be used on this project. No adverse affects to State listed rare, threatened or endangered species on Barren Island is expected to occur. Work would result in the creation of wetland habitat that would be expected to benefit wildlife on the island. See section 3.10.5 in the EA.

(7) Other Wildlife - Construction would result in increases in equipment noise that may disrupt noise sensitive species of wildlife during periods of work. Noise sensitive wildlife would be expected to avoid the area during periods of work. The breakwaters on Taylors Island and the marsh at Barren Island would ultimately provide benefit to wildlife.

(8) Actions to Minimize Impact – As discussed previously, the staging area would not be located within 50-feet of the adjacent forested area to the south, due to potential impacts to Delmarva Fox Squirrels. The design of the breakwaters and revetment included measures to minimize the project footprint and avoid impacting wetlands.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination – Measures would be taken to contain dredged material during placement and to ensure return water meets state water quality standards. The placement site would be stabilized and planted with aquatic vegetation.

(2) Determination of Compliance with Applicable Water Quality Standards – A Section 401 Water Quality Certification would be obtained from the Maryland Department of the Environment prior to the initiation of work.

(3) Potential Effects on Human Use Characteristic

(a) Municipal and Private Water Supply – The revetment along Punch Island Road would help protect private residents and their water supply from being impacted by erosion.

(b) Recreational and Commercial Fisheries - There would be increased boat and/or vehicle traffic at the project sites during construction. Recreational fishing and boating may be temporarily impacted during the construction of the project. The existing revetment would be constructed and would be slightly larger and more substantial than what currently exists. Access to St. Johns and Punch Island Creeks would be maintained. After construction is completed, fisherman would be able to resume fishing and crabbing in the area. No significant effects are expected.

(c) Aesthetics – The aesthetics of the area would change by the construction of the breakwaters and marsh. The revetment would have a similar appearance as the current and adjacent structures that are in the waterfront areas.

(d) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – See section 2e(5)(a) above.

Determination of Cumulative Effects on the Aquatic Ecosystem – No significant cumulative affect is anticipated from the proposed work. The work would contribute to the hardening of the Chesapeake Bay shoreline to help deter erosion. It will also result in the creation of about 1 acre of marsh.

Determinations of Secondary Effects on the Aquatic Ecosystem – No appreciable adverse secondary affects are anticipated. The project is not expected to result in increased development pressure at the end of Punch Island Road due to the remoteness of the site and presence of wetlands. The reduction in erosion and the creation of wetlands is expected to benefit the health of the Bay by reducing sedimentation rates and providing habitat.

3. Finding of Compliance

a. Adaptation of the Section 404(b)(1) Guidelines to This Evaluation - No adaptations of the Guidelines were made.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem. – A number of alternatives were considered consisting of the no-action alternative, use of bio-engineering techniques, breakwaters, and revetments. The proposed action consists of a combination of revetment, breakwaters and marsh creation. A discussion of the alternatives evaluated can be found in section 2 of the EA. Work proposed is water related and water dependent, and has been determined to be the least damaging practicable alternative that would accomplish the project purpose and need.

c. Compliance With Applicable State Water Quality Standards. – Work will be performed in compliance with state water quality standards.

d. Compliance With Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act. – In Compliance. There are no known toxics or pollutants in the area.

e. Compliance With Endangered Species Act of 1973 – In full compliance. There will be no impacts to these resources as practices will be in place to avoid disturbance to the federally endangered Delmarva fox squirrel.

f. Compliance With Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972 – No marine sanctuaries, as designated in the Marine Protection, Research, and Sanctuaries Act of 1972, are located within the project area.

g. Evaluation of Extent of Degradation of Waters of the United States – No significant adverse impacts, permanent or temporary, to the aquatic ecosystem diversity, productivity and stability, and recreation, aesthetics and economic values would occur as a result of this project. Adverse impacts from construction would be temporary and localized. Upon competition, the project would provide ecological benefits to the Bay.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem – All practicable methods to minimize adverse impacts have been incorporated into the projects, to include the development of an sediment and erosion control plan.

APPENDIX D

AGENCY AND PUBLIC COORDINATION

APPENDIX E

FIGURES

APPENDIX D

AGENCY AND PUBLIC COORDINATION

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard o Baltimore Maryland 21230-1718
(410) 537-4120

Robert L. Ehrlich, Jr.
Governor

Kendl P. Philbrick
Acting Secretary

December 11, 2003

Ms. Michele Gomez
ATTN: CENAB-PL-P, Civil Development Branch
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore MD 21203-1715

RE: State Application Identifier: MD20031114-1194
Project: Scooping...Taylor Island Shoreline Restoration Project

Dear Ms. Gomez:

Thank you for providing the Maryland Department of the Environment (MDE) with the opportunity to comment on the above-referenced project. Copies of the documents were circulated throughout MDE for review, and it has been determined that this project is consistent with MDE's plans, programs and objectives.

Again, thank you for giving MDE the opportunity to review this project. If you have any questions or need additional information, please feel free to call me at (410) 537-4120.

Sincerely,

Joane D. Mueller
MDE Clearinghouse Coordinator
Technical and Regulatory Services Administration

cc: Bob Rosenbush, State Clearinghouse

MARYLAND DEPARTMENT OF THE ENVIRONMENT
2500 Broening Highway • Baltimore MD 21224
(410) 631-3220

Parris N. Glendening
Governor

Jane T. Nishida
Secretary

March 15, 2001

Ms. Mallecia Hood
United States Army Corps of Engineers
10 South Howard Street
P.O. Box 1715
Baltimore, MD 21201

Dear Ms. Hood:

As stated in our phone conversation on March 15, 2002 there are two waterway restoration projects pending in Maryland that require environmental assessments by the United States Army Corps of Engineers. These projects are being completed in Dorchester and St. Mary's Counties in southern and eastern Maryland.

With respect to the Federal General Conformity Regulation (40 CFR 93.150) neither of these projects are located in nonattainment areas related to the current ozone standard. Both Dorchester and St. Mary's counties are identified as being in attainment of the one hour ozone standard. Therefore, neither of these projects are subject to 40 CRF 93.150. In all cases, the Air and Radiation Management Administration of the Maryland Department of the Environment recommends that all reasonable and readily available emission reduction measures be used to limit the amount of potential air pollution from any project in Maryland. If there are any questions regarding this letter please call me at 410-631-4125.

Sincerely,

Brian J. Hug
Air Quality Planner
Air and Radiation Management Administration
Maryland Department of the Environment

TELEPHONE DOCUMETATION

CALL TO: John Nichols, NMFS

CALL FROM: Michele Gomez and Mehrnoosh Mirzaei-Fard, CPD-P

SUBJECT: Essential Fish Habitat and Section & ESA Coordination

DATE: November 10, 2003

TIME: 2:30 pm

John Nichols stated that there are five species of concern present in the project area; short nose sturgeon, green turtles, Kemps ridley turtles, loggerhead turtles, and leatherback turtles. For construction access, if the project proposes dredging this will be a major issue for these species. John recommended contacting the Gloucester office to do the coordination and to copy his office. The Point of Contact is:

Julie Crocker
Protected Resources Division
NOAA-NMFS
1 Blackburn Drive
Gloucester Massachusetts 01930-2298

John recommended included as many potential impacts in the description as possible, even if it is only a potential possibility that the action may occur.

For EFH, John said to use the Choptank River species. John said that the Punch Island Road EFH assessment could be used as a starting point for the Taylors EFH assessment. Because the adjacent landowners have indicted that SAV does grow in the area, John recommended a spring SAV survey.

Prepared by: Michele L. Gomez
Biologist

TELEPHONE DOCUMETATION

CALL TO: Julie Crocker, NMFS-NOAA
978-281-9328 x6530

CALL FROM: Michele Gomez, CPD-P

SUBJECT: Taylors Island

DATE: February 19, 2004

TIME: 3:40 pm

Called to clarify the information in Julie's letter dated December 8, 2003. Julie said that formal consultation will not be required on this project if once we have more detailed information on the project it is determined that there are no adverse impacts to the threatened/endangered species that her office manages. An example of an adverse impact to the species in question, shortnose sturgeon and various sea turtles, would be the use of dredging for the access of the construction site.

Julie said that we should provide her office with a more detailed description of the project once it is available. It is unlikely that we will need to do formal consultation if we can avoid the potential for adversely affecting the species.

Follow-up conversation on February 23, 2004: Turtles are adversely affected by hopper dredging, as this type of dredge will suck up the turtles before that have the opportunity to move out of the way. Also, turtles are adversely affected by blasting. General construction is not a problem.

Prepared by: Michele L. Gomez
Michele L. Gomez

MD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

March 15, 2004

Wesley E. Coleman, Jr.
Chief, Civil Projects Development Branch
Department of the Army
Baltimore District, U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

RE: Taylor's Island, Proposed Construction of Protection and Stabilization Project Along Shoreline at Confluence of St. John's Creek and Punch Island Creek and Chesapeake Bay, Dorchester County, MD

Dear Mr. Coleman:

This responds to your letter, received December 4, 2003, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

One federally endangered species may be present in the project impact area. The Delmarva fox squirrel *(Sciurus niger cinereus)* occupies mature pine and hardwood forests, both bottomland and upland, with a relatively open understory. If any forest areas are to be cleared for this project, this species may be affected. Any potential impacts on Delmarva fox squirrel habitat should be analyzed as a part of your environmental assessment. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

Except for occasional transient individuals, no other federally proposed or listed endangered or threatened species are known to exist within the project impact area. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to Federally protected threatened or endangered species under our jurisdiction. It does not address other fish and wildlife concerns under the Fish and Wildlife Coordination Act. For information on the presence of other rare species, you should contact Ms. Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Maricela Constantino at (410) 573-4542.

Sincerely,

G. A. Mer

for Mary J. Ratnaswamy, Ph.D.
Program Supervisor, Threatened and Endangered Species

cc: Lori Byrne, Maryland Wildlife and Heritage Division, Annapolis, MD

Hood, Mallecia NAB02

From: Tom_Eagle@fws.gov
Sent: Monday, May 23, 2005 11:51 AM
To: Hood, Mallecia NAB02
Cc: Martin_Kaehny@fws.gov; Rachel_Cliche@fws.gov; George_Ruddy@fws.gov
Subject: Material from Taylors Island to Barren

Mallecia

I am writing you in reference to our conversation dated May 18, 2005 regarding the placement of approximately 13,000 Cubic Yards of clean dredge material from Taylors Island on Barren Island to create approximately 1-acre of wetland tidal marsh. Project will include providing all materials and labor to plant 2 acres of bare dredge material.

Project is scheduled to begin sometime during the Spring of 2006'.

Thank you for including us in your project.

Tom Eagle
Deputy Refuge Manager
Chesapeake Island Refuges
Eastern Neck, Martin & Susquehanna NWRs
1730 Eastern Neck Rd.
Rock Hall, MD 21661
Phone: (410) 639-7056
email: tom_eagle@fws.gov

Hood, Mallecia NAB02

From: George_Ruddy@fws.gov
Sent: Thursday, June 02, 2005 2:09 PM
To: Hood, Mallecia NAB02
Subject: Punch Island Road Shoreline Protection, Taylor's Island, MD

Mallecia,
We have considered your request to reduce the originally proposed 150-foot buffer between the forested habitat and the stockpile area to 50 feet.
This revision is acceptable to us and does not change our original determination that the project would not be likely to adversely affect the Delmarva fox squirrel (August 24, 2004).

George Ruddy, Biologist
USFWS/Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410-573-4528

Hood, Mallecia NAB02

From: Guise, Amy M NAB02
Sent: Monday, June 06, 2005 2:56 PM
To: Hood, Mallecia NAB02; Batchelder, Heather NAB02; Blama, Robert N NAB02
Subject: FW: Dorchester County Project Review

-----Original Message-----
From: Ryan, Shawn V. [mailto:SRyan@dnr.state.md.us]
Sent: Monday, June 06, 2005 2:53 PM
To: Guise, Amy M NAB02
Cc: Casanova, Len; Robert Tenanty (E-mail)
Subject: FW: Dorchester County Project Review

> -----Original Message-----
> From: Hindman, Larry
> Sent: Friday, June 03, 2005 10:01 AM
> To: Ryan, Shawn V.
> Cc: Limpert, Roland
> Subject: RE: Dorchester County Project Review
>
> Shawn: After reviewing the proposed shoreline stabilization project along Taylor's Island Road and at the mouth of Punch Island Creek the Department agrees to waive the time of year restriction for wintering waterfowl to enable the County to complete the work. The work will protect the State-owned and private wetlands that lie eastward of the Bay.
>
> If I can be of further help please contact me.
>
> Sincerely
>
> Larry Hindman
> Waterfowl Project Manager
> Maryland Department of Natural Resources 828B Airpax Road, Suite 500
> Cambridge, MD 21613 Tel. 410/221-8838
>
>
>

Hood, Mallecia NAB02

From: JJ Orth [jjorth@vims.edu]
Sent: Wednesday, August 25, 2004 4:12 PM
To: Hood, Mallecia
Subject: SAV at Taylors Island

Mallecia:
This is to confirm the conversation we had earlier re. whether SAV is present along the shoreline at Taylors Island fronting the mainstem Chesapeake Bay. The VIMS annual SAV monitoring program has not recorded SAV in this region since its inception in 1984. The closest SAV is in Oyster Cove at the north end of Taylors Island. It is entirely possible that the individual may have mistaken some macroalgae in that area or either widgeongrass or horned pondweed could have been present for a very brief period. Horned pondweed has been found in the general area and develops during the winter months but dies back by the end of June. Given the exposure of this shoreline, its likely SAV would not persist long.

Sincerely,
Bob Orth

****
Robert J. Orth (JJ) 804-684-7392 (office)
Virginia Institute of Marine Science 804-684-7293 (fax)
School of Marine Science jjorth@vims.edu
College of William and Mary http://www.vims.edu/bio/sav
Gloucester Point, Virginia 23062

street address for FED-EX, etc: 1208 Greate Road, Gloucester Point, VA 23062
****

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

DEC - 8 2003

Wesley E. Coleman, Jr.
Chief, Civil Projects Development Branch
Planning Division
Department of the Army
Baltimore District, Corps of Engineers
PO Box 1715
Baltimore, MD 21203-1715

Dear Mr. Coleman:

This correspondence is in response to your letter dated November 17, 2003 requesting information on the presence of any federally listed threatened or endangered species under the jurisdiction of the National Marine Fisheries Service (NOAA Fisheries) in the vicinity of the proposed shoreline erosion project at Taylor's Island, Dorchester County, Maryland. Your letter also requested information on consultation requirements under Section 7 of the Endangered Species Act (ESA) of 1973, as amended.

The federally endangered shortnose sturgeon (*Acipenser brevirostrum*) has been documented in the Chesapeake Bay. The NOAA Fisheries recovery plan (1998) indicates that shortnose sturgeon found in the Chesapeake Bay and its tributaries are considered part of the Chesapeake Bay population. Welsh *et al.* (1999) summarizes historical and recent evidence of shortnose sturgeon presence in the Chesapeake Bay. The first published account of shortnose sturgeon in the Chesapeake system was an 1876 record from the Potomac River reported in a general list of fishes of Maryland (Uhler and Lugger 1876). Other historical records of shortnose sturgeon in the Chesapeake include: the Potomac River (Smith and Bean 1899), the upper Bay near the mouth of the Susquehanna River in the early 1980's, and the lower Bay near the mouths of the James and Rappahannock rivers in the late 1970's (Dadswell *et al.* 1984). The US Fish and Wildlife Service Reward Program for Atlantic Sturgeon began in 1996. Shortnose sturgeon have been incidentally captured via this program. As of May 2003, fifty-four shortnose sturgeon were captured via the reward program in the Chesapeake Bay and its tributaries – two from the Susquehanna Flats, eight from the Susquehanna River, two in the Bohemia River, six in the Potomac River, one in the Sassafras River, one in the Elk River, two south of the Bay Bridge near Kent Island, one near Howell Point, one just north of Hoopers Island, and two in Fishing Bay. The remaining shortnose sturgeon were captured in the upper Bay north of Hart-Miller Island. These fish were captured alive in either commercial gillnets, poundnets, fykenets, eel pots, hoop nets, or catfish traps.

Several species of sea turtles are known to be present in the Chesapeake Bay. Leatherback sea turtles (*Dermochelys coriacea*) are present off the Maryland coast but are predominantly pelagic.

Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempii*), and green sea turtles (*Chelonia mydas*) are present in the Mid Atlantic region mainly during late spring, summer and early fall when water temperatures are relatively warm. Aerial surveys of loggerhead turtles north of Cape Hatteras indicate that they are most common in waters from 22 to 49m deep, although they range from beaches to waters beyond the continental shelf. In the Chesapeake Bay area, Kemp's ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation. Green sea turtles are known to occur in estuarine and oceanic waters along the East Coast from Long Island to the tropics. Recent data from sightings and incidental captures in fishing gear indicate that Loggerhead and Kemp's ridley are the species of sea turtles most likely to be found in the waters of Chesapeake Bay while Leatherback and Green sea turtles may be also in the area.

Section 7(a)(2) of the ESA states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Because shortnose sturgeon and listed sea turtles are likely to be present in the vicinity of the project area and may be affected by the project, the proposed action must undergo Section 7 consultation. The federal action agency, in this case the ACOE, is responsible for initiating Section 7 consultation. When project details are developed, please submit a description of the project along with an assessment of the projects impacts on shortnose sturgeon and sea turtles to the attention of the Endangered Species Coordinator, NOAA Fisheries, Northeast Regional Office, One Blackburn Drive, Gloucester, MA 01930. After reviewing this information, NOAA Fisheries will then be able to conduct a consultation under Section 7 of the ESA.

Thank you for your cooperation in this matter. If you have any questions or concerns about these comments or about the consultation process in general, please contact Julie Crocker of my staff at (978) 281-9328 ext. 6530.

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

Cc: Nichols, F/NER4 - OX

File Code: Sec. 7 – spp. presence MD

Maryland Department of Planning

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

November 14, 2003

Ms. Michele Gomez
ATTN: CENAB-PL-P, Civil Project Development Branch
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20031114-1194
Reply Due Date: December 13, 2003
Project Description: Scoping during the design phase of the Taylor Island Shoreline Restoration Project: restore a portion of the shoreline and protect the aquatic ecosystem at Taylors Island: construct segmented stone breakwater and wetlands restoration
Project Location: County of Dorchester
Clearinghouse Contact: Bob Rosenbush

Dear Ms. Gomez:

Thank you for submitting your project for intergovernmental review. Participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps ensure project consistency with plans, programs, and objectives of State agencies and local governments. MIRC enhances opportunities for approval and/or funding and minimizes delays by resolving issues before project implementation.

The following agencies and/or jurisdictions have been forwarded a copy of your project for their review: the Maryland Department(s of the Environment, Housing and Community Development, including the Maryland Historical Trust, Natural Resources; the County of Dorchester; and the Maryland Department of Planning. They have been requested to contact your agency directly by **December 10, 2003** with any comments or concerns and to provide a copy of those comments to the State Clearinghouse for Intergovernmental Assistance. Please be assured that after **December 10, 2003** all MIRC requirements will have been met in accordance with Code of Maryland Regulations (COMAR 14.24.04). The project has been assigned a unique State Application Identifier that should be used on all documents and correspondence.

A "Project Survey" form is enclosed with this letter. Please complete and return it within 14 days of the date of this letter. If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey mab

Linda C. Janey, J.D., Director
Maryland State Clearinghouse for Intergovernmental Assistance

LCJ:BR
Enclosure(s)
cc: Joane Mueller – MDE*
Kathy Opferman - DHCD/MHT*
Ray Dintaman – DNR*
Steven Dodd – DRCH*
Pat Goucher – MDPL*
Joe Tassone – MDPE*

03-1194_NDC.NEW.doc

Maryland Department of Planning

Robert L. Ehrlich, Jr.
Governor
Michael S. Steele
Lt. Governor

Audrey E. Scott
Secretary
Florence E. Burian
Deputy Secretary

PROJECT SURVEY

Would you please take a few moments and tell us the source of information used by your agency to apply to the **U.S. Department of Defense (DOD/ARMY)** for this grant and/or service. Please complete this form and return it to the State Clearinghouse within 14 days of **November 14, 2003** to the address or fax number noted below or by sending the information, including the State Application Identifier listed below, via E-mail to **CLHouse@MDP.state.md.us**

TO: **Maryland State Clearinghouse**
Maryland Department of Planning
301 West Preston Street
Room 1104
Baltimore, MD 21201-2305

DATE: _____
(Date form completed)

FROM: _____
(Name of person completing this form.)

PHONE: _____-_____-_____
(Area Code & Phone number)

RE: State Application Identifier: MD20031114-1194
Project Description: Scoping during the design phase of the Taylor Island Shoreline Restoration Project: restore a portion of the shoreline and protect the aquatic ecosystem at Taylors Island: construct segmented stone breakwater and wetlands restoration

☐ Chronicle of Philanthropy	☐ GrantsNet	☐ Nonprofit Organization Website
☐ Commerce Business Daily	☐ Health Grants and Contracts Weekly	☐ Previous Grantee
☐ Community Health Funding Report	☐ LISTSERV	☐ Red Book (Catalog of State Assistance)
☐ E-Mail Automatic Notification	☐ Local/State Funding Report and Grant Alert	☐ Seminar or Workshop Attended
☐ Federal Agency Website	☐ Maryland Department of Planning Website	☐ State Agency Website
☐ Federal Assistance Monitor	☐ Maryland Grants (MD Grants)	☐ The Catalog of Federal Domestic Assistance (CFDA)
☐ Federal Grants and Contracts Weekly	☐ Maryland Register	☐ The Foundation Center
☐ Federal Register	☐ NIH Guide for Grants and Contracts	
☐ Please Identify Other Source(s) Not Listed Above:		

Thank you.

Environmental Review Specialist,
Wildlife and Heritage Service

ER# 2002.0487.do
Cc: L. Hindman
R. Limpert

APPENDIX E

FIGURES

US Army Corps
of Engineers
Baltimore District

Chesapeake Bay Environmental Program, Section 510

Taylors Island Shoreline Protection and Marsh Creation

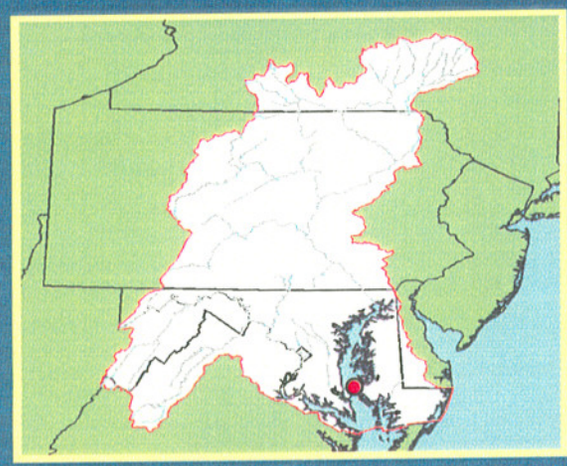

Figure 1: Taylors Island

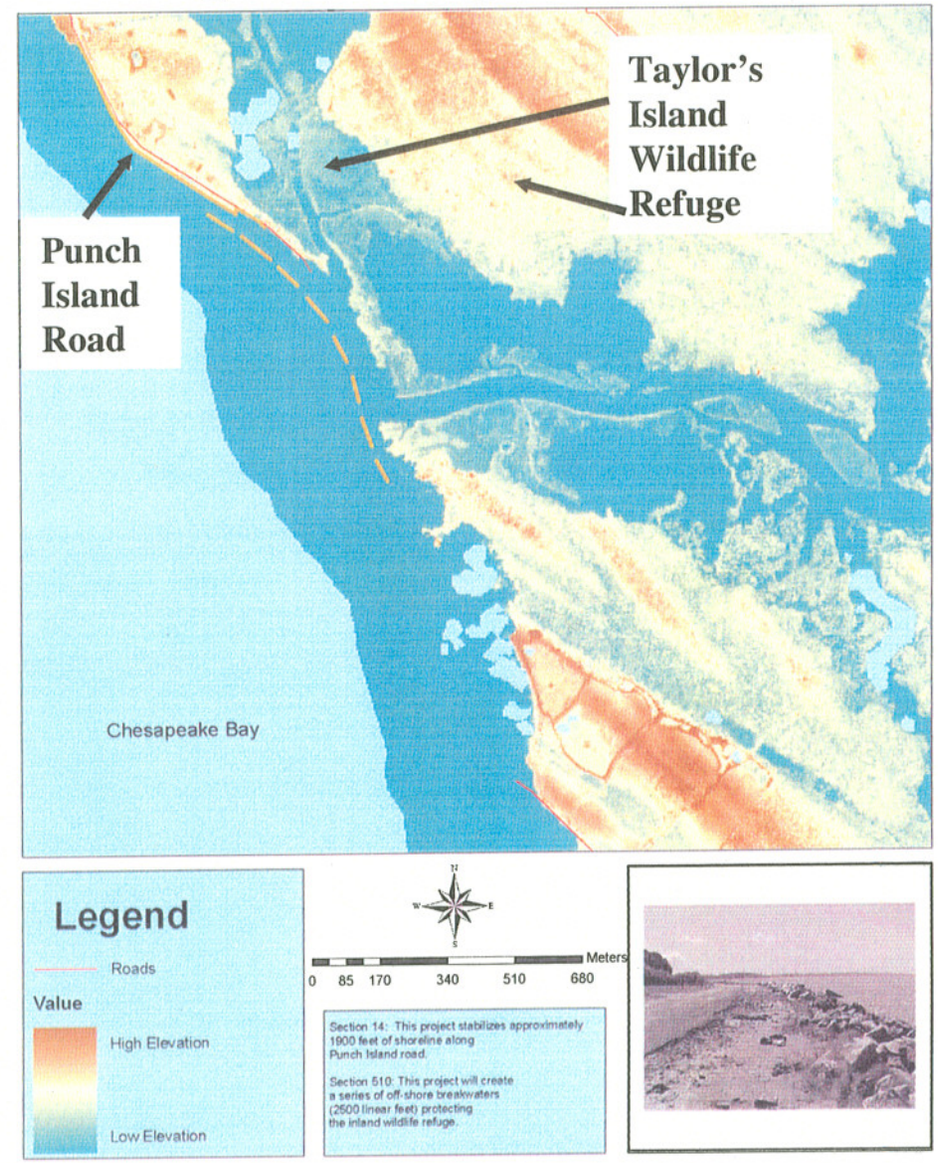

Figure 2: Locator Map of Taylors and Barren Island

Figure 3: Barren Island Placement Site